

IEEE 802.3 Major PAR form questions

The PAR form is completed on-line in through the myProject system. Many of the PAR question are proforma and are automatically complete by selecting a IEEE 802.3 amendment project. These items include Standards Committee and the Working Group officers. This slideset therefore provides the major items from the PAR form to assist in consensus building leading up to approving a completed draft PAR form.

All acronyms shall be spelled out at first use.

The following are the Major PAR responses
for the IEEE P802.3^{dm} draft PAR

To add a continuation slide: CTRL-M -> right click new slide -> Layout -> select 'Continued' layout

PAR item 2.1 – Project title

Project title: Standard for Ethernet Amendment:

Physical Layer Specifications and Management Parameters for Asymmetrical Electrical Automotive Ethernet

Help text: The title of the base standard is uneditable. Please enter the amendment title in the text box. The title should be sufficiently unambiguous, understandable by NesCom member not from the society that submitted the PAR. All acronyms shall be spelled out in the title.

PAR item 4.2 and 4.3 Project dates

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Standards Association Ballot:

May 2025

Help text: Enter the date the draft standard is planned to be submitted to IEEE-SA for Initial Standards Association Ballot.

4.3 Projected Completion Date for Submittal to RevCom:

January 2026

Help text: Enter the date the draft standard is planned to be submitted to RevCom for processing (not to exceed four years from the date of PAR submission). **It is suggested to allow at least six months after Initial Standards Association Ballot for the ballot process.** Cutoff dates for submitting draft standards to RevCom can be found in the yearly calendar located: <http://standards.ieee.org/about/sasb/meetings.html>.

PAR item 5.1 – Project participation

5.1 Approximate number of people expected to be actively involved in the development of this project:

70

Help text: This includes Working Group members, additional non-voting participants.

PAR item 5.2A – Standard scope

5.2A Scope of the complete standard:

This standard defines Ethernet local area, access and metropolitan area networks. Ethernet is specified at selected speeds of operation; and uses a common media access control (MAC) specification and management information base (MIB). The Carrier Sense Multiple Access with Collision Detection (CSMA/CD) MAC protocol specifies shared medium (half duplex) operation, as well as full duplex operation. Speed specific Media Independent Interfaces (MIIs) provide an architectural and optional implementation interface to selected Physical Layer entities (PHY). The Physical Layer encodes frames for transmission and decodes received frames with the modulation specified for the speed of operation, transmission medium and supported link length. Other specified capabilities include: control and management protocols, and the provision of power over selected twisted pair PHY types.

Help text: If this Amendment will change the scope statement of the complete document (base + Amendment), it can be edited and should be explained in the Additional Explanatory Notes field at the end of the PAR form. If this Amendment will not change the scope statement of the complete document the pre-populated text should be left as is.

PAR item 5.2B – Project scope

5.2B Scope of the Project:

Specify additions to and appropriate modifications of IEEE Std 802.3 to add:

- Physical Layer specifications and management parameters for electrical media and operating conditions optimized for automotive end-node cameras for operation up to 25 Gbps in one direction and with a lower data rate in the other direction,
- and
- A protocol or sublayer for interfacing a physical layer device with different data rate capabilities in the transmit and receive directions to the existing 802.3 MAC with media independent interfaces at existing 802.3 rates.

Help text: State what the Amendment is changing or adding.

PAR item 5.3 – Project contingency

5.3 Is the completion of this standard contingent upon the completion of another standard (Yes or No)? If yes, please explain below:

No

5.3.1 If yes, please explain:

Help text: Your explanation should include how the standard is dependent upon the completion of another standard. Also, if applicable, why a PAR request is being submitted if the standard currently under development is not yet complete. The title and number of the standard which this project is contingent upon shall be included in the explanation.

PAR item 5.4 – Project purpose

5.4 Will the completed document (base + amendment) contain a purpose clause:

Yes No

Note: IEEE Std 802.3 does not contain a Purpose Clause.

PAR item 5.5 – Project need

5.5 Need for the Project:

Automotive in-vehicle networks are transitioning to Ethernet. Multigigabit links such as imaging sensors at end-nodes of the network where the backchannel is low bandwidth are important parts of this transition. These end-nodes are highly constrained on complexity and power consumption and converting them to Ethernet will require solutions specified for their operating conditions.

The need for the project details the specific problem that the standard will resolve and the benefit that users will gain by the publication of the standard. The need statement should be brief, no longer than a few sentences.

PAR item 5.6 – Stakeholders

5.6 Stakeholders for the Standard:

End-users, automotive Original Equipment Manufacturers (car makers) and Tier x automotive suppliers, system integrators, and providers of systems and components (e.g., cameras, sensors, actuators, artificial intelligence (AI) processors, instruments, controllers, network infrastructure, user interfaces, and servers) for automotive and other transportation, building and industrial automation, and biomedical applications.

The stakeholders (e.g., telecom, medical, environmental) for the standard consist of any parties that have an interest in or may be impacted by the development of the standard.

PAR item 7.1 – Similar scope

7.1 Are there other standards or projects with a similar scope? (Yes or No)?

Yes

If yes, please explain:

There are no other IEEE standards or projects with a completely similar scope.

IEEE Std 2977-2021, MIPI Alliance—MIPI A-PHY Specification Version 1.0, partially overlaps the physical layer part of the scope. The scope of this standard states: “The standard provides an asymmetric data link in a point-to-point or daisy-chain topology, with high-speed unidirectional data, embedded bidirectional control data and optional power delivery over a single cable. In this way, it reduces wiring, cost and weight, as high-speed data, control data and optional power share the same physical wiring. For integration with existing network backbones, it complements Ethernet, Controller Area Network (CAN), FlexRay and other interfaces.”

Additionally, individuals associated with the project have reported one other industry effort outside of IEEE 802 that may at least partially overlap the physical layer part of the scope of the proposed project: The Automotive SerDes Alliance (ASA) Motion Link Ethernet (MLE) 2.0 specification. This specification has not been liaised to the IEEE 802.3 Working Group and is not publicly available. ASA has liaised an earlier version of the specification to IEEE 802.3.

Stakeholders for the proposed IEEE 802 project have expressed the desire for the effort proposed in this PAR to define the MAC parameters, physical layer specifications, and management parameters that are consistent and completely integrated with existing IEEE 802.3 Ethernet specifications.

7.1.1 Similar scope project

Standards Committee Organization

IEEE

Project/Standard Number:

IEEE Std 2977-2021

Project/Standard Title:

IEEE Standard for Adoption of MIPI Alliance Specification for A-PHY Interface (A-PHY) Version 1.0

Project/Standard Date:

16 Jun 2021

7.1.2 Similar scope project

Standards Committee Organization

Automotive SerDes Alliance

Project/Standard Number:

ASA 2.0

Project/Standard Title:

ASA-MLE

Project/Standard Date:

N/A

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?

No

PAR item 8.1 – Additional notes

Additional Explanatory Notes:

N/A

If there is any further information that may assist NesCom in recommending approval for this project, include this information here. The title of any documents referenced in the PAR should be listed here.